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*Subsurface Exploration and
Preliminary Geotechnical Engineering Report*

CEDAR FIELD LIGHTING

Marysville, Washington

Prepared For:

CITY OF MARYSVILLE

DEPARTMENT OF PARKS, CULTURE, AND RECREATION

Project No. 180110E001

April 17, 2018



Associated Earth Sciences, Inc.
911 5th Avenue
Kirkland, WA 98033
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F (425) 827 5424



a s s o c i a t e d
e a r t h s c i e n c e s
i n c o r p o r a t e d

April 17, 2018
Project No. 180110E001

City of Marysville
Department of Parks, Culture, and Recreation
6915 Armar Road
Marysville, Washington 98270

Attention: Mr. Jim Ballew

Subject: Subsurface Exploration and Preliminary Geotechnical Engineering Report
Cedar Field Lighting
1010 Cedar Avenue
Marysville, Washington

Dear Mr. Ballew:

Associated Earth Sciences, Inc. (AESI) is pleased to present the enclosed copies of our preliminary geotechnical engineering report for the referenced project. This report summarizes the results of our subsurface exploration and geotechnical engineering studies and offers preliminary geotechnical engineering recommendations for the design of the proposed project.

We have enjoyed working with you on this study and are confident that the recommendations presented in this report will aid in the successful completion of your project. Please contact us if you have any questions or if we can be of additional help to you.

Sincerely,
ASSOCIATED EARTH SCIENCES, INC.
Kirkland, Washington

Matthew A. Miller, P.E.
Principal Engineer

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**SUBSURFACE EXPLORATION AND
PRELIMINARY GEOTECHNICAL ENGINEERING REPORT**

CEDAR FIELD LIGHTING

Marysville, Washington

Prepared for:

**City of Marysville
Department of Parks, Culture, and Recreation
6915 Armar Road
Marysville, Washington 98270**

Prepared by:

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**April 17, 2018
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I. PROJECT AND SITE CONDITIONS

1.0 INTRODUCTION

This report presents the results of our subsurface exploration and preliminary geotechnical engineering studies for the proposed Cedar Field Lighting. The site location is shown on the "Vicinity Map," Figure 1. Existing site features, and the approximate locations of the subsurface explorations referenced in this study are presented on the "Site and Exploration Plan," Figure 2. This report is based on our email discussions with you; a preliminary site plan titled "Cedar Falls Layout," prepared by the City of Marysville, dated February 1, 2018; and our general knowledge of geologic conditions in the vicinity of the site. At the time this report was written, no detailed plans had been formulated for the project.

1.1 Purpose and Scope

The purpose of this study was to provide subsurface soil and shallow groundwater data to be utilized in the preliminary design of the proposed Cedar Field Lighting. Our study included a review of selected available geologic literature, completing four hollow-stem auger soil borings, and performing geologic studies to assess the type, thickness, distribution, and physical properties of the subsurface sediments and shallow groundwater. A preliminary geotechnical engineering study was completed to formulate recommendations regarding foundation design for new light fixtures. This report summarizes our current fieldwork and offers development recommendations based on our present understanding of the project.

2.0 PROJECT AND SITE DESCRIPTION

The project site is that of the existing baseball field located on Cedar Avenue in Marysville, Washington. The baseball field is bounded by The Boys and Girls Club of America building and parking lot to the west, an alley to the north, Cedar Avenue to the east, and 10th Street to the south. The baseball field is a natural turf field with sand surface base paths and pitching mound. The field also has a small section of bleachers on first and third base sides, two bullpens, and perimeter fencing.

We understand that the proposed project will include the installation of four Musco light poles. The new light poles will be located near the left and right field corners, and one on either side of home plate near the bleachers. The poles will have a concrete base installed that will support the light tower.

3.0 SITE EXPLORATION

On March 20, 2018, we completed four hollow-stem auger borings at the locations shown on Figure 2. Logs of the borings, labeled EB-1 to EB-4, are included in the Appendix of this report. The borings were completed by advancing a 3-inch inside-diameter, hollow-stem auger with a track-mounted drill rig. During the drilling process, samples were obtained at generally 2.5- to 5-foot-depth intervals. The exploration borings were continuously observed and logged by an engineering geologist from our firm. The various types of soils, as well as the depths where characteristics of the soils changed, are indicated on the exploration logs presented in the Appendix of this report. The exploration logs presented in the Appendix are based on the field logs, drilling action, and observation of the samples secured. Our explorations were approximately located by measuring from known site features shown on the drawing that was provided to us. Because of the nature of exploratory work, extrapolation of subsurface conditions between field explorations is necessary. Differing subsurface conditions may be present due to the random nature of natural sediment deposition and the alteration of topography by past grading and filling. The nature and extent of any variations between the field explorations may not become fully evident until construction. If variations are observed at the time of construction, it may be necessary to re-evaluate specific recommendations in this report and make appropriate changes.

Disturbed, but representative samples were obtained by using the modified Standard Penetration Test (SPT) procedure. This test and sampling method consists of driving a 2-inch outside-diameter, split-barrel sampler a distance of 18 inches into the soil with a 140-pound hammer free-falling a distance of 30 inches. The number of blows for each 6-inch interval is recorded, and the number of blows required to drive the sampler the final 12 inches is known as the Standard Penetration Resistance ("N") or blow count. If a total of 50 is recorded within one 6-inch interval, the blow count is recorded as the number of blows for the corresponding number of inches of penetration. The resistance, or N-value, provides a measure of the relative density of granular soils or the relative consistency of cohesive soils; these values are plotted on the attached exploration boring logs.

The samples obtained from the split-barrel sampler were classified in the field and representative portions placed in watertight containers. The samples were then transported to our laboratory for further visual classification.

4.0 SUBSURFACE CONDITIONS

Subsurface conditions at the project site were inferred from the field explorations conducted for this study, visual reconnaissance of the site, and a review of selected applicable geologic literature. As shown on the field logs, our exploration borings encountered Marysville Recessional Sands below the surficial layers.

4.1 Stratigraphy

Marysville Recessional Sands

Sediments encountered beneath surficial layers in our explorations generally consisted of massive, loose to medium dense sand and gravel with variable silt content. We interpret these sediments to be representative of Marysville Recessional Sands. These recessional sands were deposited by meltwater streams flowing off of the retreating glacial ice during the latter portion of the Vashon Stade of the Fraser Glaciation approximately 12,500 to 15,000 years ago. This unit is suitable for support of light to moderately loaded foundations.

4.2 Hydrology

Shallow groundwater was encountered in all of our borings. Groundwater encountered at this site is representative of the regional aquifer. It should be noted that fluctuations in the level of the groundwater may occur due to the time of the year, on- and off-site land use, and variations in the amount of rainfall.

4.3 Published Geologic Map

We reviewed a published geologic map of the area (J.P. Minard, 1985, *Geologic Map of the Marysville Quadrangle, Snohomish County, Washington*, U.S. Geological Survey (USGS) Miscellaneous Field Studies Map MF-1743). The referenced map indicates that the site vicinity is characterized by the Marysville Sand Member (Qvrm), with younger alluvial units mapped to the south.

II. PRELIMINARY DESIGN RECOMMENDATIONS

5.0 INTRODUCTION

It is our opinion that, from a geotechnical engineering standpoint, the proposed new light pole foundations are feasible provided that the recommendations contained herein are properly followed. Light pole foundations should be designed with lateral and vertical capacities that are applicable to the materials in which they are embedded. We are available on request to assist in identification of appropriate soil support parameters to be used at specific light locations when those locations are selected.

6.0 LIGHT POLE FOUNDATIONS

We anticipate that light pole foundations for this project will consist of concrete piers cast neat against the sidewalls of drilled holes. Temporary casing should be used to support the excavations for the light pole foundations in order to facilitate construction and limit caving.

6.1 Vertical Compressive Capacities

For this project, we anticipate that lateral capacities will be the most critical design factor for the light pole foundations, and will likely exert the most control over the depth of embedment.

The exploration borings of this site revealed subsurface conditions that varied slightly over horizontal distances and depths. End-bearing capacities and depths are given for each light pole location in the following table:

Table 1
Recommended Light Pole Foundation End-Bearing Capacity

Boring Number	Minimum Depth to Base of Foundation (feet)	Recommended Allowable End Bearing (psf)
EB-1	10	2,000
EB-2	10	2,000
EB-3	15	2,000
EB-4	10	2,000

psf = pounds per square foot

6.2 Lateral Capacities

Passive Pressure Method

Lateral loads on the proposed light pole foundations, caused by seismic or transient loading conditions, may be resisted by passive soil pressure against the side of the foundation. An allowable passive earth pressure of 150 pounds per cubic foot (pcf), expressed as an equivalent fluid unit weight, may be used for that portion of the foundation embedded within the Marysville Recessional Sands. The above value only applies to foundation elements cast "neat" against undisturbed soil. Temporary casing used to install foundations should be removed after the concrete is set. Passive values presented are assumed to be a triangular pressure distribution over 2-foot diameter beginning at the surface and held at a constant depth greater than 8 feet. The triangular pressure distribution is truncated above 2 feet.

Light Pole Foundation Construction Considerations

In our opinion, the light pole foundation excavations will need to be cased during drilling to facilitate construction and limit caving. In order to achieve the passive pressure given, the temporary casing should be removed once the concrete or grout area has been placed. The contractor should include temporary casing for the light pole foundation holes in his base bid, in our opinion. Exploration borings suggest that light pole borings may encounter varying degrees of gravel.

7.0 PROJECT DESIGN AND CONSTRUCTION MONITORING

We are available to provide additional geotechnical consultation as the project design develops and possibly changes from that upon which this report is based. We recommend that AESI perform a geotechnical review of the plans prior to final design completion.

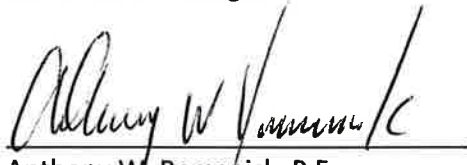
We are also available to provide geotechnical engineering and monitoring services during construction. The integrity of the light pole foundations depends on proper site preparation and construction procedures. In addition, engineering decisions may have to be made in the field in the event that variations in subsurface conditions become apparent. Construction monitoring services are not part of this current scope of work. If these services are desired, please let us know, and we will prepare a cost proposal.

We have enjoyed working with you on this study and are confident these recommendations will aid in the successful completion of your project. If you should have any questions or require further assistance, please do not hesitate to call.

Sincerely,
ASSOCIATED EARTH SCIENCES, INC.
Kirkland, Washington



Tyler Gilsdorf, G.I.T.
Senior Staff Geologist

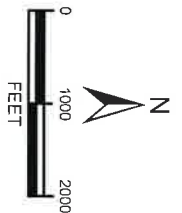
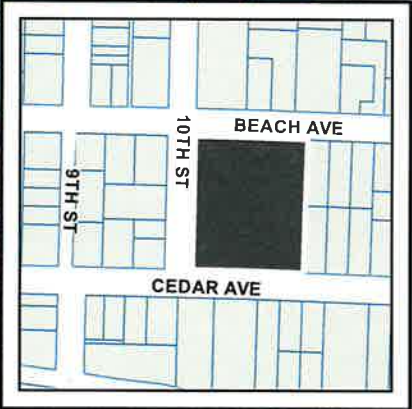
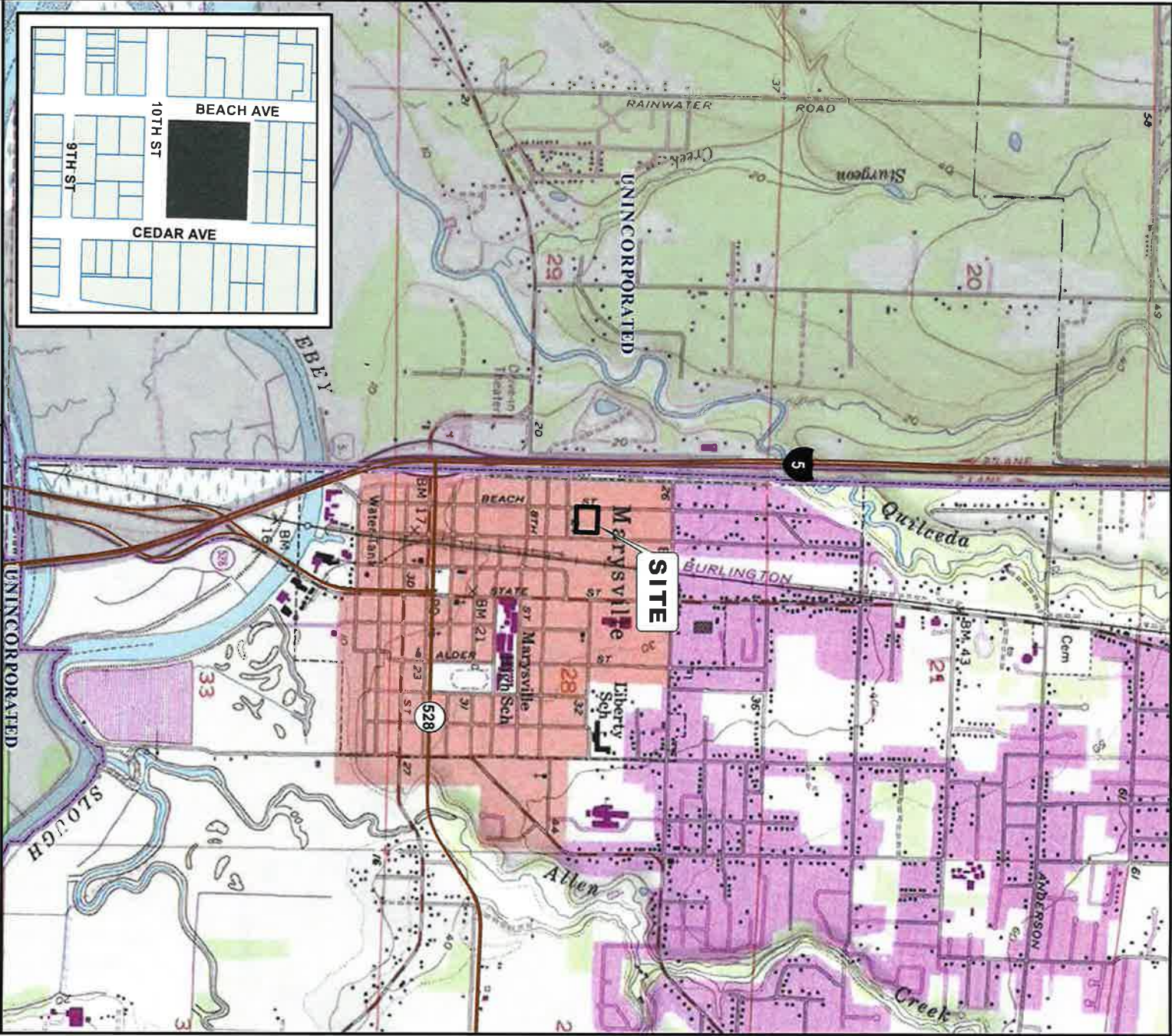


Anthony W. Romanick, P.E.
Project Engineer



Matthew A. Miller, P.E.
Principal Engineer

Attachments: Figure 1: Vicinity Map
 Figure 2: Site and Exploration Plan
 Appendix: Exploration Logs



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VICINITY MAP

CEDAR FIELD LIGHTING
MARYSVILLE, WASHINGTON

PROJ NO.	DATE:	FIGURE:
180110E001	3/18	1

DATA SOURCES / REFERENCES:
USGS, 7.5 SERIES TOPOGRAPHIC MAPS, ESRI/CUBEDINGS 2013
SNOHOMISH CO. STREETS, CITY LIMITS, PARCELS, 1/18
LOCATIONS AND DISTANCES SHOWN ARE APPROXIMATE



LEGEND:

● EB EXPLORATION BORING

CONTOUR INTERVAL = N/A

NOTE: LOCATION AND DISTANCES SHOWN ARE APPROXIMATE.

NOTES:

1. BASE MAP REFERENCE: CITY OF MARYSVILLE PUBLIC WORKS DEPARTMENT, CEDAR FIELDS LAYOUT, 2/1/18

BLACK AND WHITE REPRODUCTION OF THIS COLOR ORIGINAL MAY REDUCE ITS EFFECTIVENESS AND LEAD TO INCORRECT INTERPRETATION.



SITE AND EXPLORATION PLAN

**CEDAR FIELD LIGHTING
MARYSVILLE, WASHINGTON**

PROJ. NO.	180110E001	DATE:	3/18	FIGURE:	2
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APPENDIX

Coarse-Grained Soils - More than 50% ⁽¹⁾ Retained on No. 200 Sieve			Terms Describing Relative Density and Consistency	
Sands - 50% ⁽¹⁾ or More of Coarse Fraction Passes No. 4 Sieve	Gravels - More than 50% ⁽¹⁾ of Coarse Fraction Retained on No. 4 Sieve	Gravels - More than 50% ⁽¹⁾ of Coarse Fraction Retained on No. 4 Sieve	GW	Well-graded gravel and gravel with sand, little to no fines
Sands - 50% ⁽¹⁾ or More of Coarse Fraction Passes No. 4 Sieve	Gravels - More than 50% ⁽¹⁾ of Coarse Fraction Retained on No. 4 Sieve	Gravels - More than 50% ⁽¹⁾ of Coarse Fraction Retained on No. 4 Sieve	GP	Poorly-graded gravel and gravel with sand, little to no fines
Sands - 50% ⁽¹⁾ or More of Coarse Fraction Passes No. 4 Sieve	Gravels - More than 50% ⁽¹⁾ of Coarse Fraction Retained on No. 4 Sieve	Gravels - More than 50% ⁽¹⁾ of Coarse Fraction Retained on No. 4 Sieve	GM	Silty gravel and silty gravel with sand
Sands - 50% ⁽¹⁾ or More of Coarse Fraction Passes No. 4 Sieve	Gravels - More than 50% ⁽¹⁾ of Coarse Fraction Retained on No. 4 Sieve	Gravels - More than 50% ⁽¹⁾ of Coarse Fraction Retained on No. 4 Sieve	GC	Clayey gravel and clayey gravel with sand
Sands - 50% ⁽¹⁾ or More of Coarse Fraction Passes No. 4 Sieve	Gravels - More than 50% ⁽¹⁾ of Coarse Fraction Retained on No. 4 Sieve	Gravels - More than 50% ⁽¹⁾ of Coarse Fraction Retained on No. 4 Sieve	SW	Well-graded sand and sand with gravel, little to no fines
Sands - 50% ⁽¹⁾ or More of Coarse Fraction Passes No. 4 Sieve	Gravels - More than 50% ⁽¹⁾ of Coarse Fraction Retained on No. 4 Sieve	Gravels - More than 50% ⁽¹⁾ of Coarse Fraction Retained on No. 4 Sieve	SP	Poorly-graded sand and sand with gravel, little to no fines
Sands - 50% ⁽¹⁾ or More of Coarse Fraction Passes No. 4 Sieve	Gravels - More than 50% ⁽¹⁾ of Coarse Fraction Retained on No. 4 Sieve	Gravels - More than 50% ⁽¹⁾ of Coarse Fraction Retained on No. 4 Sieve	SM	Silty sand and silty sand with gravel
Sands - 50% ⁽¹⁾ or More of Coarse Fraction Passes No. 4 Sieve	Gravels - More than 50% ⁽¹⁾ of Coarse Fraction Retained on No. 4 Sieve	Gravels - More than 50% ⁽¹⁾ of Coarse Fraction Retained on No. 4 Sieve	SC	Clayey sand and clayey sand with gravel
Sils and Clays Liquid Limit Less than 50	Sils and Clays Liquid Limit Less than 50	Sils and Clays Liquid Limit Less than 50	ML	Silt, sandy silt, gravelly silt, silt with sand or gravel
Sils and Clays Liquid Limit 50 or More	Sils and Clays Liquid Limit 50 or More	Sils and Clays Liquid Limit 50 or More	CL	Clay of low to medium plasticity; silty, sandy, or gravelly clay, lean clay
Sils and Clays Liquid Limit 50 or More	Sils and Clays Liquid Limit 50 or More	Sils and Clays Liquid Limit 50 or More	OL	Organic clay or silt of low plasticity
Sils and Clays Liquid Limit 50 or More	Sils and Clays Liquid Limit 50 or More	Sils and Clays Liquid Limit 50 or More	MH	Elastic silt, clayey silt, silt with micaceous or diatomaceous fine sand or silt
Sils and Clays Liquid Limit 50 or More	Sils and Clays Liquid Limit 50 or More	Sils and Clays Liquid Limit 50 or More	CH	Clay of high plasticity, sandy or gravelly clay, fat clay with sand or gravel
Sils and Clays Liquid Limit 50 or More	Sils and Clays Liquid Limit 50 or More	Sils and Clays Liquid Limit 50 or More	OH	Organic clay or silt of medium to high plasticity
Highly Organic Soils			PT	Peat, muck and other highly organic soils

Terms Describing Relative Density and Consistency		
	Density	SPT ⁽²⁾ blows/foot
Coarse-Grained Soils	Very Loose	0 to 4
	Loose	4 to 10
	Medium Dense	10 to 30
	Dense	30 to 50
	Very Dense	>50
	Consistency	SPT ⁽²⁾ blows/foot
Fine-Grained Soils	Very Soft	0 to 2
	Soft	2 to 4
	Medium Stiff	4 to 8
	Stiff	8 to 15
	Very Stiff	15 to 30
	Hard	>30

Test Symbols	
G	= Grain Size
M	= Moisture Content
A	= Atterberg Limits
C	= Chemical
DD	= Dry Density
K	= Permeability

Component Definitions	
Descriptive Term	Size Range and Sieve Number
Boulders	Larger than 12"
Cobbles	3" to 12"
Gravel	3" to No. 4 (4.75 mm)
Coarse Gravel	3" to 3/4"
Fine Gravel	3/4" to No. 4 (4.75 mm)
Sand	No. 4 (4.75 mm) to No. 200 (0.075 mm)
Coarse Sand	No. 4 (4.75 mm) to No. 10 (2.00 mm)
Medium Sand	No. 10 (2.00 mm) to No. 40 (0.425 mm)
Fine Sand	No. 40 (0.425 mm) to No. 200 (0.075 mm)
Silt and Clay	Smaller than No. 200 (0.075 mm)

⁽³⁾ Estimated Percentage		Moisture Content
Component	Percentage by Weight	
Trace	<5	Dry - Absence of moisture, dusty, dry to the touch
Some	5 to <12	Slightly Moist - Perceptible moisture
Modifier (silty, sandy, gravelly)	12 to <30	Moist - Damp but no visible water
Very modifier (silty, sandy, gravelly)	30 to <50	Very Moist - Water visible but not free draining
		Wet - Visible free water, usually from below water table

Symbols	
Sampler Type	Blows/6" or portion of 6"
2.0" OD Split-Spoon Sampler (SPT)	10 15 20
Bulk sample	3.0" OD Split-Spoon Sampler
Grab Sample	3.25" OD Split-Spoon Ring Sampler
	3.0" OD Thin-Wall Tube Sampler (including Shelby tube)
	Portion not recovered

Sampler Type	Description
	Cement grout surface seal
(4)	Bentonite seal
(4)	Filter pack with blank casing section
(4)	Screened casing or Hydrotip with filter pack
	End cap

⁽¹⁾ Percentage by dry weight	⁽⁴⁾ Depth of ground water
⁽²⁾ (SPT) Standard Penetration Test (ASTM D-1586)	▼ ATD = At time of drilling
⁽³⁾ In General Accordance with Standard Practice for Description and Identification of Soils (ASTM D-2488)	▽ Static water level (date)
	⁽⁵⁾ Combined USCS symbols used for fines between 5% and 12%

Classifications of soils in this report are based on visual field and/or laboratory observations, which include density/consistency, moisture condition, grain size, and plasticity estimates and should not be construed to imply field or laboratory testing unless presented herein. Visual-manual and/or laboratory classification methods of ASTM D-2487 and D-2488 were used as an identification guide for the Unified Soil Classification System.



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Exploration Log

Project Number
180110E001

Exploration Number
EB-1

Sheet
1 of 1

Project Name **Cedar Field Lighting**

Location **Marysville, WA**

Driller/Equipment **Geologic Drill / Walk-Behind**

Hammer Weight/Drop **140# / 30"**

Ground Surface Elevation (ft) _____

Datum **N/A**

Date Start/Finish **3/20/18, 3/20/18**

Hole Diameter (in) **4 inches**

Depth (ft)	S T	Samples	Graphic Symbol	DESCRIPTION	Well Completion	Water Level	Blows/ft	Blows/Foot				Other Tests
								10	20	30	40	
				Asphalt - 4 inches								
				Crushed Rock - 4 inches								
				Marysville Recessional Sands								
5		S-1		Moist, light brown to tan with minor oxidation, fine to medium SAND, trace silt, trace gravel; massive (SP).			3 2 3	▲5				
		S-2		Very moist, light brown to light gray, fine to medium SAND, trace silt, trace gravel; massive (SP).			3 3 2	▲5				
		S-3		As above, wet.			5 6 8	▲14				
10		S-4		Driller reported heaving sands at 10 feet, added drilling mud. Wet, light grayish brown with zones of oxidation, fine to medium SAND, trace silt, trace gravel; slight sorting of fine and medium sand (SP).			5 8 9	▲7				
15		S-5		Wet, brownish gray, fine SAND, trace silt; mica flakes (SP).			4 4 8	▲12				
20		S-6		Wet, grayish brown, fine SAND, some silt; mica flakes (SP-SM).			5 8 12	▲20				
25				Bottom of exploration boring at 21.5 feet								

Sampler Type (ST):



2" OD Split Spoon Sampler (SPT)



No Recovery

M - Moisture



3" OD Split Spoon Sampler (D & M)



Ring Sample

Water Level ()



Grab Sample



Shelby Tube Sample

Water Level at time of drilling (ATD)

Logged by: TG

Approved by: JHS



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Exploration Log

Project Number
180110E001

Exploration Number
EB-2

Sheet
1 of 1

Project Name **Cedar Field Lighting**

Location **Marysville, WA**

Driller/Equipment **Geologic Drill / Walk-Behind**

Hammer Weight/Drop **140# / 30"**

Ground Surface Elevation (ft)

Datum **N/A**

Date Start/Finish **3/20/18, 3/20/18**

Hole Diameter (in) **4 inches**

Depth (ft)	S-T	Samples	Graphic Symbol	DESCRIPTION	Well Completion	Water Level	Blows/6"	Blows/Foot				Other Tests
								10	20	30	40	
				Asphalt - 3 inches								
				Crushed Rock - 3 inches								
				Topsoil								
				Marysville Recessional Sands								
5		S-1		Moist, light brown to reddish tan, fine SAND, trace gravel, trace silt; massive (SP).			3 3 3	▲6				
		S-2		Moist to very moist, light brown to light gray with oxidation in upper 6 inches, fine to medium SAND, some silt, trace gravel; sorting of fine and medium sand apparent (SP-SM).			4 4 5	▲9				
		S-3		Very moist to wet, light brownish gray, fine SAND, trace silt, trace gravel; massive (SP).			6 5 5	▲10				
10		S-4		Driller reported heaving sands at 10 feet, added drilling mud. Wet, light brownish gray, fine SAND, some silt, trace gravel; contains a layer (2 inches thick) of sandy, silt (SP-SM).			6 7 11	▲18				
15		S-5		Wet, light brownish gray, fine to medium SAND, some silt, trace gravel; silt nodule (1 inch) in sampler (SP-SM).			6 4 8	▲12				
20		S-6		Wet, light brownish gray, very silty, fine SAND, trace gravel (SM).			3 6 9	▲15				
				Layer (4 inches thick) of oxidized, SILT (ML).								
				Bottom of exploration boring at 21.5 feet								
25												

Sampler Type (ST):

- ☐ 2" OD Split Spoon Sampler (SPT)
- ☐ 3" OD Split Spoon Sampler (D & M)
- ☐ Grab Sample

- ☐ No Recovery
- ☐ Ring Sample
- ☐ Shelby Tube Sample

- M - Moisture
- ☐ Water Level ()
- ☐ Water Level at time of drilling (ATD)

Logged by: TG
Approved by: JHS



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Exploration Log

Project Number
180110E001

Exploration Number
EB-3

Sheet
1 of 1

Project Name **Cedar Field Lighting**
Location **Marysville, WA**
Driller/Equipment **Geologic Drill / Walk-Behind**
Hammer Weight/Drop **140# / 30"**

Ground Surface Elevation (ft) _____
Datum **N/A**
Date Start/Finish **3/20/18, 3/20/18**
Hole Diameter (in) **4 inches**

Depth (ft)	ST	Samples	Graphic Symbol	DESCRIPTION	Well Completion	Water Level	Blows/6"	Blows/Foot				Other Tests
								10	20	30	40	
				Asphalt - 2 inches Crushed Rock - 3 inches Marysville Recessional Sands								
5		S-1		Moist, light brown, fine SAND, trace silt, trace gravel; massive (SP).			3 2 3	▲5				
		S-2		Very moist, brown and gray, gravelly, fine to medium SAND, trace silt; heavily oxidized sand in sampler tip (SP).			5 8 6		▲14			
		S-3		Very moist to wet, light gray and brown, fine to medium SAND, some silt, trace gravel; contains layer (1 inch thick) of sandy, silt (SP-SM).			2 4 4		▲8			
10		S-4		Driller reported heaving sands at 10 feet, added drilling mud. Wet, light brownish gray, silty, fine SAND, trace gravel (SM). Lowest 6 inches: Very silty, fine SAND.			2 3 4		▲7			
15		S-5		Wet, light brownish gray, silty, fine SAND (SM).			5 4 8		▲12			
20		S-6		Wet, light brownish gray, silty, fine SAND; mica flakes (SM).			5 9 11		▲20			
25				Bottom of exploration boring at 21.5 feet								

Sampler Type (ST):

- ☐ 2" OD Split Spoon Sampler (SPT)
- ☐ 3" OD Split Spoon Sampler (D & M)
- ☒ Grab Sample

- ☐ No Recovery
- ☒ Ring Sample
- ☒ Shelby Tube Sample

- M - Moisture
- ☒ Water Level ()
- ☒ Water Level at time of drilling (ATD)

Logged by: TG
Approved by: JHS



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Exploration Log

Project Number
180110E001

Exploration Number
EB-4

Sheet
1 of 1

Project Name **Cedar Field Lighting**
Location **Marysville, WA**
Driller/Equipment **Geologic Drill / Walk-Behind**
Hammer Weight/Drop **140# / 30"**

Ground Surface Elevation (ft) _____
Datum **N/A**
Date Start/Finish **3/20/18, 3/20/18**
Hole Diameter (in) **4 inches**

Depth (ft)	S T	Samples	Graphic Symbol	DESCRIPTION	Well Completion	Water Level	Blows/6"	Blows/Foot				Other Tests
								10	20	30	40	
				Grass Turf / Topsoil Marysville Recessional Sands								
		S-1		Moist, light brown to tan, fine SAND, trace silt, trace gravel; massive (SP).		4 2 2	▲4					
5		S-2		Very moist, light brown and gray, gravelly, fine to medium SAND, trace silt; massive (SP).		7 8 10			▲18			
		S-3		Very moist to wet, light brown and gray, silty, fine to medium SAND ranging to sandy, SILT; mica flakes; minor oxidation around siltier clasts (SM-ML).		10 10 13				▲23		
10		S-4		Driller reported heaving sands at 10 feet, added drilling mud. Wet, light brown and gray, silty, fine SAND; mica flakes; siltier layers (SM).		4 8 15				▲23		
15		S-5		Wet, light brownish gray, fine SAND, some silt, trace gravel; mica flakes (SP-SM).		12 14 17					▲31	
20		S-6		Wet, light gray, fine to medium SAND, trace silt, trace gravel; mica flakes (SP).		8 10 15					▲25	
25				Bottom of exploration boring at 21.5 feet								

Sampler Type (ST):

- ☐ 2" OD Split Spoon Sampler (SPT)
☐ 3" OD Split Spoon Sampler (D & M)
☒ Grab Sample

- ☐ No Recovery
☒ Ring Sample
☒ Shelby Tube Sample

- M - Moisture
☒ Water Level ()
☒ Water Level at time of drilling (ATD)

Logged by: TG
Approved by: JHS

City of Marysville

Parks, Culture and Recreation Department

Cedar Field Athletic Lighting Project

Bid Proposal through Sourcewell RFP 82114#

The City of Marysville is seeking Bid Proposals through the Sourcewell RFP #82114 for the purpose of providing ATHLETIC LED FIELD LIGHTING WITH RELATED MATERIALS, SUPPLIES, and INSTALLATION AND SERVICES.

PART-1 GENERAL

1.1 SCOPE OF WORK

- A. The City of Marysville requires the qualified bidder through the Sourcewell Contract 82114# to include all design, labor, materials, equipment, tools and supervision necessary for the complete installation of FIELD LIGHTING for a field space of approximately 38,600 square feet. The Athletic Field Lighting system(s) must consist of but not necessarily be limited to the following:

1. Site preparation.
2. Temporary site fencing.
3. Excavate and remove excess soils.
4. Supply detailed foundation design certified by structural engineer registered in the State of Washington.
5. Form, pour and finish all foundations required to set poles as per structural engineering requirements.
6. Supply and install up to six (6) 60 foot Galvanized steel poles.
7. Supply and install UL listed remote electrical component enclosures.
8. Provide all electrical supply requirements and coordination with local PUD for appropriate service levels.
9. Supply and install all pole length harnesses.
10. Supply and install all underground wiring, conduit and connection to power source(s).
11. Supply and install factory aimed LED lighting system with excellent Spill Light Controls.
12. Supply a 25 year parts and labor Warranty.
13. Installation must be supported with guaranteed lighting levels for 25 years.
14. All pole locations to be confirmed prior to installation.
15. Demobilize.
16. Supply Eight (25) year warranty.

- 1.2 All local guidelines and applicable laws must be adhered to throughout the duration of the project.

1.3 CITY OF MARYSVILLE (OWNER) RESPONSIBILITIES

1. The City of Marysville (Owner) shall provide all building and planning permits.
2. City will pay all applicable State and Local Sales Tax.
3. City will provide geotechnical report.
4. City will provide all site inspections.
5. City will reinstall all field fencing and field netting removed by Contractor.

2.0 Proposal Deadline

1. All proposals are to be submitted no later than 4:00p.m. September 18, 2019 to:
(Electronic submittals will not be accepted.)

City of Marysville
City Clerk
1049 State Avenue
Marysville, WA 98270

Attn: Cedar Field Renovation

For more information contact the City of Marysville

Project Manager

Kyle Woods

kwoods@marysvillewa.gov

360-363-8286